



Cavity and Continuous Insulation in REScheck™

Insulation Terms

Continuous Insulation:

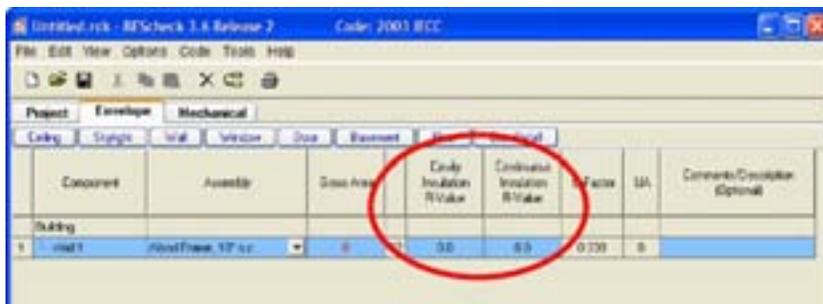
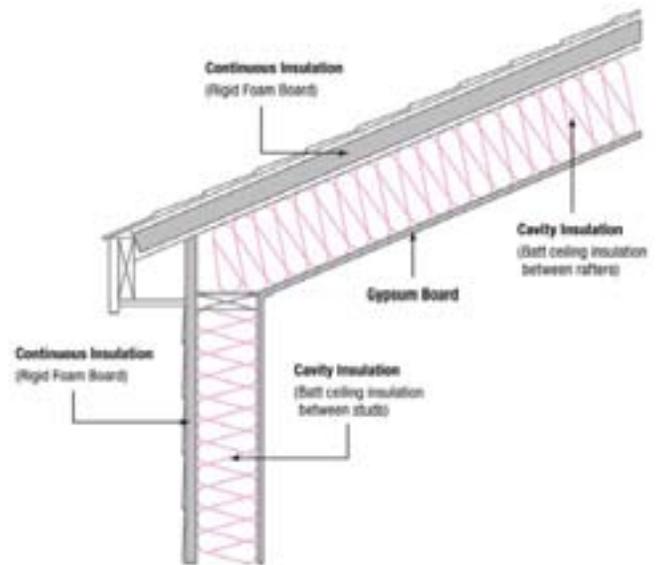
Insulation that runs continuously over structural members and is free of significant thermal bridging, such as rigid foam insulation above the ceiling deck. It is installed on the interior, exterior, or is integral to any opaque surface of the building envelope.

Cavity Insulation:

Insulation installed between structural members such as wood studs, metal framing, and Z-clips.

Cavity insulation is used within the wood- or metal-framed wall, while rigid continuous insulation (c.i.) is placed on the exterior side of the framing.

Alternative combinations of cavity insulations and sheathings in thicker walls can be used, provided the total wall assembly has a U-factor that is less than or equal to the appropriate climate zone construction.



Cavity Insulation Calculation in REScheck

Insulation should be installed to fill the entire cavity. REScheck uses nominal insulation R-values. The program does not calculate for compression. For example, if R-19 is entered as the cavity insulation R-value, it assumes the full R-19 in REScheck. Walls with insulation R-values equal to or less than R-15 are modeled in REScheck as having 2x4 studs at either 16" or 24" O.C. (on center) and cavity wall insulation R-values greater than R-15 are modeled as 2x6 studs at either 16" or 24" O.C.

Continuous Insulation Calculation/Insulated Sheathing

The assemblies listed in REScheck already have a default value added for standard sheathing (depending on the assembly component). If no sheathing

REScheck Quick Tip

Cavity R-Value - Enter the R-value of any insulation to be installed in the cavities between above-grade wall structural members. The insulating values of other parts of the building assembly (e.g., gypsum board and air films) are accounted for by the program and should not be included.

Continuous R-Value - Enter the R-value of any continuous insulation in the above-grade wall. Continuous insulation is continuous over framing members or furring strips and is free of significant thermal bridging. The R-values of other parts of the building assembly (e.g., gypsum board and air films) are accounted for by the program and should not be entered. Insulated sheathing installed on the exterior of above-grade walls is an example of continuous insulation. For structural insulated panels and insulated concrete forms, enter the manufacturer-reported R-value for the entire assembly.

is indicated by the user, the sheathing is assumed to be plywood with an R-value of 0.83. If insulated sheathing is used, only 80% of the net wall is assumed to be covered by the insulated sheathing. The other 20% is assumed to be covered with plywood.

For additional information on REScheck calculations, refer to the Technical Support Document located at the following link:

<http://www.energycodes.gov/rescheck/download.stm>

Other Related Information

<http://resourcecenter.pnl.gov/cocoon/morf/ResourceCenter/article/139>

<http://resourcecenter.pnl.gov/cocoon/morf/ResourceCenter/article//1452>

<http://resourcecenter.pnl.gov/cocoon/morf/ResourceCenter/article//105>

<http://resourcecenter.pnl.gov/cocoon/morf/ResourceCenter/article//170>

What's Coming up in the Next Major Releases of REScheck and COMcheck™, Scheduled for October 2005

COMcheck

- 90.1 - 2004 compliance
- Compliance for alterations in 90.1 - 1999, 90.1 - 2001, and 90.1 - 2004
- Redesigned project detail inputs

REScheck

- Enhanced log wall options
- Beyond the code feature
- Redesigned project detail inputs

In The Field: Code Notes

No Headers in Nonbearing Walls

The use of header stock over windows and doors in nonbearing walls is a typical construction practice throughout the industry. But a single 2-inch-by-4-inch is allowed to be used as a header in non-load-bearing wall systems. This practice is unfamiliar to many in the enforcement and building industry.

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Header Hangers in Bearing Walls

Headers for windows and doors are typically supported by cripples or jack studs. These studs can be eliminated using header hangers, as allowed under the International Residential Code.

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AEDG Implementation Recommendations: Glazing Design

The Advanced Energy Design Guide (AEDG) seeks to achieve 30 percent savings over Standard 90.1-1999. This guide focuses on improvements to small office buildings, less than 20,000 square feet. The recommendations below are adapted from the implementation section of the guide and should be used in conjunction with the whole document.

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Highlights from the 2005 National Workshop on State Building Energy Codes

DOE's 2005 National Workshop on State Building Energy Codes was held in Austin, TX, June 26 - 30, 2005. The Workshop participants included attendees representing energy-related organizations in 36 states and territories. This year's event reached an all time high of over 235 attendees including staff from state energy offices, utilities, energy code consultants, energy efficiency advocacy groups, industry/trade associations, builders, and model code organizations. In addition, pre- and post-Workshop trainings totaled over 300 attendees. The Workshop included two half-day Texas-specific trainings (COMcheck-EZ and Lighting for Commercial Buildings), one half-day REScheck / COMcheck-EZ training, 2-1/2 days of sessions (including plenary and 19 technical sessions), and a half-day Texas-specific training on ASHRAE Standard 90.1-2004. The agenda and presentations can be viewed at http://www.energycodes.gov/news/2005_workshop/. Planning efforts for the 2006 Workshop are underway.

Building Energy Codes Training

DOE hosts live web-based REScheck training event - On May 6, 2005, over 450 builders, code officials, architects, and others interested in learning how to use REScheck to demonstrate energy code compliance participated in an instructor-led, web-based training session led by Pacific Northwest National Laboratory (PNNL) on behalf of DOE. To view a video of this training course, go to http://www.energycodes.gov/training/onlinetraining/rescheck_rebroadcast_video.stm. To view the FAQs generated from the event, go to http://www.energycodes.gov/training/pdfs/may05_rescheckQA.pdf.

DOE hosts live web-based COMcheck training event—on August 18, 2005, over 790 builders, code officials, architects, and others interested in learning how to use COMcheck to demonstrate energy code compliance participated in an instructor-led, web-based training session led by PNNL on behalf of DOE. A video of this training event is currently being compiled and will soon be available at http://www.energycodes.gov/training/onlinetraining/webex_0805.stm.

Upcoming Events

For a calendar of upcoming energy code-related training events, visit www.energycodes.gov/events/index.php.

Want To Become a Beta Tester?

Would you like to be the first to see the latest enhancements and features in COMcheck software? Register as a beta tester at http://www.energycodes.gov/training/registration_form.php?event_link=com_beta.



U.S. Department of Energy
Energy Efficiency
and Renewable Energy

A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.



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Building Energy Codes Website:
www.energycodes.gov

Tech Support:
www.energycodes.gov/helpdesk.cfm